REMARKS/ARGUMENTS

Claims 3-10 are amended by this response. Claims 1-2 are canceled, and no claims are added. Upon entry of these amendments and remarks, claims 3-11 will remain pending.

Embodiments of the present invention relate to a power supply. In particular embodiments, the switching operation is stopped when a load is light, and the switching operation is caused to automatically restart after elapse of a predetermined time from the stop of the switching. At the restart of the switching operation, if the load is still light, the switching operation is stopped again.

When a light load persists for a long time, the stopping and restarting of the switching operation is repeated, thereby achieving low power consumption. Moreover, when the condition of the load is normal, the switching operation can be continued without requiring any special signal to be introduced from outside of the power supply.

For example, as shown in FIG. 1 (reproduced below):

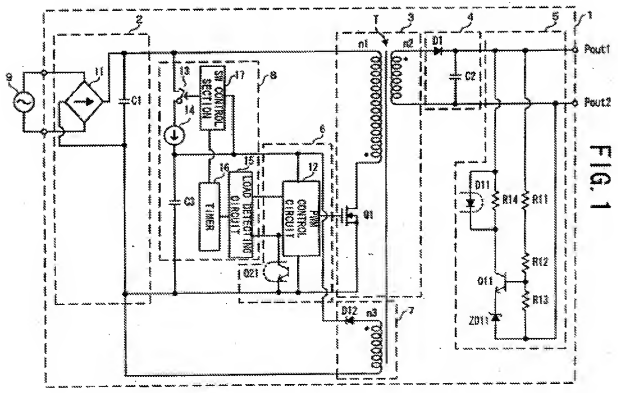


FIG. 1

when DC voltage input section (2) starts inputting DC voltage to a primary winding (n1) of transformer (T), a charge circuit section (13, 14) supplies a current from the DC voltage input section to charge the capacitor (C3). When the charged voltage of the capacitor (C3) becomes

one that operates a drive control section (6), the drive control section (6) switches on and off the switching section (Q1).

Switching on and off of the switching section (Q1) generates a voltage on the third winding (n3) of the transformer, and this voltage charges the capacitor (C3).

When the charge voltage of the capacitor exceeds a preset voltage value, the charge circuit section (13, 14) stops charging the capacitor from the DC voltage input section. However, the capacitor is continuously charged by the voltage of the third winding.

When an output current supplied to a load is less than a predetermined voltage value (the load is light), an operation stop section (15) stops the operation of the drive control section (6). This stops the switching of the switching section (Q1) and stops consumption of power, as well as stopping consumption of the switching current in the drive control section (6).

By the stopping of the switching on off of the switching section (Q1), even when the capacitor is discharged, the charge control section causes the charge circuit section to restart charging the capacitor when a time measuring section (16) detects elapse of a predetermined time from the stop of the operation of the drive control section. In the embodiment of claim 8, the discharge control section causes the charge circuit section to restart charging the capacitor. Both of these configurations allow switching on and off of the switching section again.

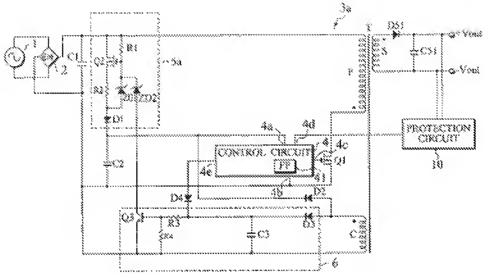
In the latest office action, all of the claims were rejected either as anticipated by U.S. Patent Publication No. US2005/0201123 to Usui et al. ("the Usui Publication"), or as obvious in view of the Usui Publication taken further in combination with U.S. Patent Publication No. US2002/0145888 to Yoshinaga et al. ("the Yoshinaga Publication"). These claim rejections are overcome as follows.

As a threshold matter, it is noted that certain claims stand rejected as anticipated, and not merely obvious, in view of the Usui Publication:

> [t]he distinction between rejections based on 35 U.S.C. 102 and those based on 35 U.S.C. 103 should be kept in mind. Under the former, the claim is anticipated by the reference. No question of obviousness is present. In other words, for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. (Emphasis added; MPEP 706.2)

Here, the Usui Publication fails to teach, explicitly or impliedly, every element of the claims.

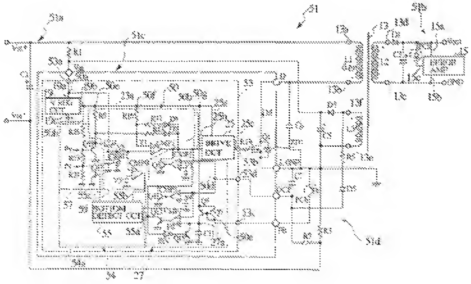
In relying upon the Usui Publication, the Examiner has cited FIG. 2 (reproduced below):



In this FIG. 2, a capacitor (C2) is charged by a constant current to activate the converter (3a) upon the start of the input of an AC voltage from an AC power source (1). Afterwards, if the operational state of the converter is normal, the charging of the capacitor (C2) is continued by a voltage generated in a winding (C).

Thus in the Usui Publication, after the activation of the converter, if any abnormality (such as excessive voltage or excessive heating) occurs, capacitor (C2) is continuously charged by a voltage that is lower than one that is generated in the winding (C). Such a configuration stands in contrast with embodiments of the invention, wherein a capacitor is allowed to discharge when the load is light, and to resume/restart charging after elapse of a predetermined time.

Regarding the Yoshinaga Publication, FIG. 1 of that reference is reproduced below:



According to this figure, when the input of DC voltage from the DC power source is started, the capacitor (C5) is charged via the resistor (R1), and activates the switching power supply. Afterwards, by the voltage generated in the winding (L3), charging the capacitor (C5) is continued.

Thus, the switching power supply of Yoshinaga Publication can detect that the load is light. But, when the load is light, that apparatus raises the voltage charging the capacitor (C9) that determines a time duration of switch-off of the switching section to lengthen each off-period of switching. Accordingly, the apparatus of the Yoshinaga Publication does not cause the voltage across the capacitor (C5) to discharge for a predetermined time and thereafter charging the capacitor.

Based upon the failure of the art being relied upon, even in combination, to teach every element of the pending claims, it is respectfully asserted that the claims cannot reasonably be considered anticipated or obvious. Continued maintenance of the rejections is improper, and the claim rejections should be withdrawn.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and a Notice of Allowance is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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